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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/728,237	12/03/2003	Jean-Paul Mardon	12928/100022	7515

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EXAMINER	
SHEEHAN, JOHN P	

ART UNIT	PAPER NUMBER
1742	

MAIL DATE	DELIVERY MODE
05/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/728,237	MARDON ET AL.	
	Examiner	Art Unit	
	John P. Sheehan	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 March 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *7-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *7-12* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/5/2007*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 7 to 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sabol et al. (Sabol, US Patent No. 4,649,023, cited in the IDS submitted March 18, 2004) in view of Rebeyrolle et al. (Rebeyrolle, US Patent No. 5,832,050, cited in the IDS submitted March 18, 2004).

Sabol teaches a method of making tubes for use in nuclear reactors (Abstract and column 1, lines 35 to 45) from zirconium base alloys comprising 0.5 to 2.0% niobium, up to 1.5% tin, and up to 0.25% iron, chromium or vanadium (Abstract). Sabol specifically teaches that the disclosed invention includes embodiments wherein Cr, Mo, V, Cu, Ni and W can be added in substitution or in addition to iron (column 5, lines 40 to 48). Thus, Sabol is not limited to a single third element but rather encompasses embodiments where Fe is used in combination with V or Cr as recited in the instant claims. Sabol also teaches that the disclosed zirconium alloys can contain 1000-1600 ppm oxygen, carbon in amounts less than 100 ppm and silicon in an amount of less

than 80 ppm. Sabol teaches a process comprising heating the zirconium alloy to a temperature of about 950 to 1000^0C, quenching the alloy, extruding the alloy at a temperature of about 700^0C, cold rolling the alloy with intermediate annealing at a temperature of about 600^0C and final annealing the alloy at a temperature of less than about 650^0C (see column 3, lines 10 to 60 and column 6, lines 49 and 50). Sabol describes the first heat treatment temperature as about 950 to 1000^0C (column 3, lines 11 and 12). In view of Sabol's use of the term "about" to describe the temperature range as "about 950-1000^0C", Sabol's disclosed temperature range is considered to overlap the applicants' claimed temperature range of "between 1000^0 and 1200^0C". Thus, with the exception of the sulfur content of the zirconium alloy, Sabol teaches the applicants' claimed process.

Rebeyrolle teaches that 8 to 100 ppm and preferably 8 to 30 ppm of sulfur (Abstract) improves the creep behavior and the corrosion resistance (column 8, lines 19 to 34) of zirconium alloys that are used on nuclear reactors (Abstract).

One of ordinary skill in the art at the time the invention was made would have been motivated to add sulfur to Sabol's zirconium alloy so as to improve the creep behavior and the corrosion resistance of zirconium Sabol's disclosed alloy.

Double Patenting

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct

from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 7 to 12 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 13 to 16 of copending Application No. 10/885,927. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed process recited in these two sets of claims overlaps. A prima facie case of obviousness exists when the ranges of a claimed invention overlap the ranges disclosed in the prior art In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05. .

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claims 7 to 12 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 9 of U.S. Patent No. 6,863,745. Although the conflicting claims are not identical, they are not patentably distinct from

each other because the claimed process recited in these two sets of claims overlaps. A prima facie case of obviousness exists when the ranges of a claimed invention overlap the ranges disclosed in the prior art In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Response to Arguments

4. Applicant's arguments filed March 5, 2007 have been fully considered but they are not persuasive.

5. Applicants' various arguments and reasons why Sabol teaches an alloy that contains only **one of** iron, chromium and vanadium and not iron and one of chromium or vanadium are not persuasive. Sabol specifically teaches that the disclosed invention includes embodiments wherein Cr, Mo, V, Cu, Ni and W can be added in substitution or in addition to iron (column 5, lines 40 to 48). Thus, Sabol is not limited to a single third element as applicants argue but rather Sabol specifically teaches that the disclosed invention encompasses embodiments wherein Fe is used in combination with V or Cr as recited in the instant claims.

6. In making the above arguments, applicants have relied on two articles, Kim et al. and Nikulin et al. It is pointed out that in relying on these articles applicants have not specifically explained what it is in each of the articles that applicants are relying on in coming to the conclusion stated in applicants remarks (page 6, first full paragraph to page 7, line 8).

7. Applicants argue that Sabol is deficient in that Sabol teaches an initial heat treatment temperature of 950^0C to 1000^0C while the applicants' claims recite an initial heat treatment temperature of 1000^0C to 1200^0C. The Examiner is not persuaded. Sabol describes the first heat treatment temperature as about 950 to 1000^0C (column 3, lines 11 and 12). In view of Sabol's use of the term "about" to describe the temperature range as "about 950-1000^0C", Sabol's disclosed temperature range is considered to overlap the applicants' claimed temperature range of "between 1000^0 and 1200^0C".

8. Applicants' arguments that the claims are not obvious in view of Sabol or Rebeyrolle either alone or in combination and that the Examiner has not pointed to any teaching, motivation or suggestion that would render the claimed invention obvious in view of Sabol and Rebeyrolle are not persuasive. It is the Examiner's position that the statement of the rejection set forth above follows the factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966). That the rejection sets forth an objective teaching by Rebeyrolle that the addition of 8 to 100 ppm and preferably 8 to 30 ppm of sulfur (Abstract) improves the creep behavior and the corrosion resistance (column 8, lines 19 to 34) of zirconium alloys that are used on nuclear reactors (Abstract), which is the same type of alloy taught by the primary reference (Sabol) and recited in the instant claims. Further, based on Reyeyrolle's teaching that the addition of 8 to 100 ppm and preferably 8 to 30 ppm of sulfur improves the creep behavior and the corrosion resistance of zirconium alloys that are used on nuclear reactors that one of ordinary skill in the art would have been motivated to add sulfur to the alloy taught by the primary reference (Sabol). In view of the reasoning set

forth in the statement of the rejection and the explanation given here, it is the Examiner's position that the Examiner has pointed out the necessary teachings and provided the necessary motivation or suggestion to render the claimed invention obvious in view of Sabol and Rebeyrolle.

9. Applicants' arguments regarding new claim 12 and the final heat treatment temperature of 560 to 620^0C recited in the claims are not persuasive. In making their argument applicants' rely on Sabol's example (column 4, lines 4 and 5). The teachings of a reference are not limited to merely that which is set forth in the examples. Instead "[a] reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art", see MPEP 2123 and In re Widmer, 147 USPQ 518, 523 (CCPA 1965). In this case, Sabol teaches a final heat treatment temperature of below about 650^0C (column 6, lines 49 and 50) which encompasses the claimed temperature range of 560 to 620^0C.

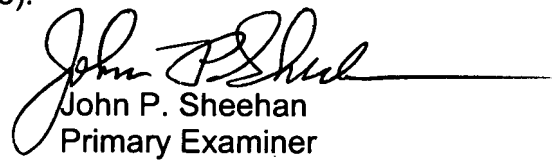
10. Applicants' argument regarding the nonstatutory obviousness type double patenting rejection based on United States Patent No. 6,863,475 is persuasive. It is noted that the previous statement of this rejection as set forth in the Office action mailed August 30, 2006 incorrectly relied on US Patent No. 6,863,475 entitled Apparatus for Injecting Fluids". This typographical error has been corrected in the statement of the rejection as set above in this Office action. The rejection is now based on US Patent No. 6,863,745.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Sheehan whose telephone number is (571) 272-1249. The examiner can normally be reached on T-F (6:45-4:30) Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John P. Sheehan
Primary Examiner
Art Unit 1742

jps